



The Greatest
Irrigated Farm
in the World.

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The Greatest
Irrigated Farm
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Condensed for Busy Men.

ONE might write a large book about the Kern County Land Company (the largest irrigated farm in the world, and consequently the biggest thing in California), but many people are too busy to read a book in the World's Fair year, or, for that matter, a long article, so here is the story reduced to paragraphs and made easy of assimilation for the busiest of them :

CHAPTER I.

THE SITUATION.

About the middle of the southern half of California, 314 miles south of San Francisco and 170 miles north of Los Angeles.

At the upper end of the famous San Joaquin Valley, where the Sierra Nevada and the Coast Range meet in a picturesque horseshoe.

On the main line of the Southern Pacific Railroad and 90 miles north of the California terminus of the Santa Fé system, whose through Pullman sleepers traverse Kern County and its principal city, over the Southern Pacific track, daily in their flight to San Francisco.

CHAPTER II.

WATER SUPPLY AND CANAL SYSTEMS.

The Kern River, rising amid the glaciers of Mount Whitney, the highest peak of the Sierra Nevada.

A perennial stream, satisfying the company's appropriations.

Numerous artesian wells of large capacity and perpetual flow, scattered over a wide area of territory, and conveniently located to supplement the main supply, if ever necessary.

Twenty-seven main canals, including the great Calloway, 120 feet wide on the top, 80 feet on the bottom, and 6 feet deep.

In all, 300 miles of main canal and 1,100 miles of large lateral, constituting a system whose striking feature, aside from its vastness, is its extreme simplicity of design and operation.

CHAPTER III.

CLIMATE.

Semi-tropical.

Like Spain, Italy and Asia Minor.

Winters without snow or ice, and with only brief, mild frosts.

Summers warm, with a few hot days, robbed of oppressiveness by the dry air.

Every day in the year suitable for outdoor work on the farm, and the fields brilliant with the beauty of wild-flowers in February.

CHAPTER IV.

THE SOIL.

Varied, but everywhere rich and productive.

Much vegetable mold, frequent traces of animal mold, and, in some localities, rock erosion.

Subsoil rich in plant food, principally of friable matter, and much like the surface, except as to effects of exposure to the atmosphere.

CHAPTER V.

PRODUCTIONS.

Peaches beyond rivalry, even in California, netting \$200 to \$300 per acre.

Raisins the equal of any in the world, netting, in full bearing, \$100 and upward an acre.

Pears of great size, fine color and flavor.

Prunes a prolific and very profitable crop, sold either fresh or dried.

All deciduous fruits and all other products of the semi tropics, except citrus, including

almonds, pecans, English walnuts, olives, cherries, pomegranates, etc.

Small fruits and vegetables grown and marketed throughout the year.

CHAPTER VI.

FARMS, COLONIES, LAND VALUES.

Size of average farm, 20 acres.

Price of land, \$60 to \$100 an acre, on long term of years at low interest.

Four hundred thousand acres, all under a perfect system of irrigation, included in the property.

Four colonies under way, viz: Rosedale, 12,000 acres; Lerdo, 11,000 acres; Union Avenue, 13,000 acres; Mountain View, 9,000 acres.

Rosedale, age three years, has splendid schoolhouse, two churches, large hotel, numerous stores and the roofs of a hundred settlers' homes dotting the landscape.

Broad avenues lead out from the county seat to the colonies.

Cost of average settler's first house, \$250 to \$400.

To purchase and develop to earning capacity twenty acres, including house, barn, implements, horses and poultry, \$2,000 suffices for an economical and thrifty family.

But twice that sum, and forty instead of twenty acres, is a better proposition by one hundred per cent.

Planting a portion of the farm in annual crops assists the settler to sustain himself while vines and trees are growing.

CHAPTER VII.

FARMS AND RANCHES.

Fourteen big ranches on the company's property.

Ninety-seven thousand acres in cultivation this year in farm, garden and orchard crops.

Forty thousand head of cattle, 40,000 head of sheep, 2,000 head of horses.

Sixty thousand acres of one crop alone—alfalfa—under cultivation this year, producing six to eight tons per acre, and selling in the stack at \$5 per ton.

Under the Calloway Canal 1,000 acres per day are irrigated with the labor of eight men at a cost of five cents per acre.

CHAPTER VIII.

SOME NOTABLE FACTS.

Total cost development of system, \$4,000,000, an expenditure borne by its owners without the sale of a single dollar's worth of bonds.

Their entire investment in the property and developments thereon up to date is three times as much, or rising \$12,000,000.

The company maintains four large experimental farms under the most expert superintendence that money can employ, and gives its colonists the benefits of the instruction and results.

It realizes that 400,000 acres cannot be sold to thousands of small proprietors in a day or a year, and therefore aims to make the experience of its present settlers a convincing argument to use with the settlers of the future.

More than any other enterprise in the West, the Kern County Land Company is solving the problems of Arid America—agricultural and horticultural, social and industrial.

It is doing so because it has the brains and the money, the land and the water, the opportunity and the inclination.



The Greatest Irrigated Farm in the World.

A California Enterprise That Stands as a Type of
Modern Irrigation Development.

[By W. E. Smythe, Editor of the *Irrigation Age*]



THE greatest irrigated farm in the world! What subject could be more inviting and promising to the readers of *The Age*? For the basis of such a farm must necessarily be a great system of canals and ditches, and that interests the engineer and ditch builder; the cultivation of field crops on a vast scale must have developed the most admirable methods of economical and profitable watering and

which furnish a liberal education in horticultural methods and results, and that interests the orchardist and planter; and, finally, the development, management and settlement of such an enterprise, and the lands covered by its system, must have been full of lessons for those who are projecting or conducting similar undertakings, and that interests the investor and promoter.

An enterprise of such vast and varied interests as this to the world of irrigation is worthy of a careful editorial



SCENE IN THE UNION AVENUE COLONY.

cultivation, and that interests the practical irrigator and farmer; the evolution of a desert into a region of orchards and vineyards must have been accompanied by a series of experiments

study in these pages. It is presented in the belief that it will be both entertaining and useful to the several classes of readers who make up the constituency of *The Age*.

I.—A Company That is Solving Problems of World-wide Interest.

Probably the most famous irrigation enterprise in the world to-day is that of the Kern County Land Company of Bakersfield, California, which has various other offices throughout the United States and Europe. Its fame is international, for it is perhaps more fully appreciated in England than in the United States. This company, as has been already suggested, is working out problems of world-wide interest. It is doing this not for philanthropic but for business reasons. Consider for a moment of what its property consists, and then see how the scientific evolution of methods of irrigation, of fruit culture, of farming and of colonization, is inseparably associated with the development of its properties.

This company owns and controls a total water appropriation of 489,900 miner's inches, or 8,198 cubic feet, so that its water supply is more than ample for the irrigation of its empire of lands.

It owns 400,000 acres of very fertile soil in the Kern Delta, the southern end of the San Joaquin Valley, lying together in a compact body on the main line of the Southern Pacific Railroad.

It owns and conducts fourteen large ranches, on which it is now feeding between 40,000 and 60,000 head of cattle, 30,000 head of sheep, and 4,000 head of horses.

It has in actual cultivation to-day, under a superb system of irrigation, in alfalfa, vegetables and fruit, the tremendous area of 97,000 acres.

It has begun the work of dividing its great property into small orchards, vineyards and farms, of laying out colonies and peopling them with home-seekers from the Eastern States and foreign countries.

And this is how it happens that the story of the largest enterprise in California and the greatest irrigated farm in the world is a matter of immense

interest and importance to the various classes of people concerned in the progress of reclamation and settlement in Western America. It is plain enough that an enterprise of such proportions must teach lessons to the world at every step of its development.

A WORD ABOUT THE COUNTRY.

A clear idea of the country which is the scene of these operations is essential to enable the reader to make intelligent comparisons with conditions existing elsewhere.

It has the semi-tropical climate of the Pacific Coast. In this locality one knows of the existence of winter only by the dispatches in his morning newspaper, and those seem like fairy tales in the land where alfalfa fields are putting forth their leaves, and roses and violets are blooming in the door-yards. The average winter day in the San Joaquin Valley is like May in New England and the Middle States. It is very rarely that the mercury drops below the freezing point at night, and if this ever happens the vagrant icicle disappears quickly before the morning sun. For practical purposes this portion of California is winterless. Every day in the year belongs to the tiller of the soil, because there is no day when he cannot cultivate his fields. Spring and autumn are delightful. As early as February the fields are carpeted with wild-flowers of the greatest beauty. The summer weather is warm, as it is in most other sections of the United States. It is doubtless true that the thermometer ranges higher during the heated term in this southern climate than in the North and East, but the dryness of the air is a mitigating circumstance of the first importance, and one hears no complaint about the summer heat, even among the newest settlers. The climate the year around is essentially like that of Italy, Spain and Asia Minor.

The soil of the Kern Delta is everywhere good, and is marked only

at rare intervals by small patches of alkali. There is a great variety of soil, some of it distinctly marked with animal and vegetable mold, and much of it showing plainly the rock erosion. The differences in the soil foreshadow a considerable diversification of crops when the country shall have become thickly settled, and this is a strong point in its favor.

The valley lies on a gentle slope, and so nearly level as to require practically no labor to fit it for irrigation. Nature did her part royally in preparing it for the scene of the vast operations now under way.

II.—The Canal System.

The mere fact that the Kern County system of irrigation is the most exten-

I believe it is absolutely unique among large irrigation enterprises in this particular. Lloyd Tevis and J. B. Haggin of San Francisco built it with their own money, and, when it is added that the cost of the canal system represents only about one-quarter of their total investment in this property, the reader will begin to discern the tremendous proportions of the enterprise, and to appreciate in what a marked degree it is peculiar.

THE SOURCE OF SUPPLY.

The Kern Valley lies at a point where the Coast Range on the west and the Sierra Nevada Mountains on the east form an immense horseshoe. The primary source from which the water supply is drawn is that king of the Sierra, Mount Whitney, eighty miles



ONE OF THE CANALS OF THE LARGEST IRRIGATED FARM IN THE WORLD.

sive in the State of California lends it unique interest to the readers of *The Age*. The most impressive feature of the canal system is the extreme simplicity of its design. It has cost the great sum of \$4,000,000, but that is due to its extent rather than to its bold construction or the engineering difficulties encountered. Indeed, there were no difficulties. Nature had spread out a vast plain of fertile soil and placed at the head of it an abundant and perennial water supply. To reclaim this desert required, at the beginning, extraordinary faith in the country, and then a very large investment of capital which, in the nature of the case, would be a long time in returning profits to the investors.

This great work has been done without the sale of a dollar's worth of bonds.

distant as the crow flies. The Kern River rises at its base, and the South Fork of the Kern at the base of another peak in the same range. These two streams join forces near the eastern line of Kern County. Together they drain a catchment area of 3,445 square miles. The precipitation, largely in the shape of snow, amounts to about one hundred inches a year in a portion of this area. For a distance of twenty miles, from the place where the river enters the foothills to the point of diversion, it flows through high and rocky banks. It continues down the valley through low banks, a calm, sluggish and thoroughly docile stream in ordinary seasons. The source of supply is unfailing and the amount ample.

The topography of the country is such that the irrigation of 400,000

acres is accomplished without raising the river above its natural level by the construction of high dams, and it is claimed that even 600,000 acres may be covered from the point where the first canal is taken out. These facts will carry to the mind of the reader a striking idea of what nature has done to make the Kern Delta suitable for irrigation on the largest scale. Probably no case can be instanced where so large a body of land is watered from one source without recourse to bold engineering and expensive methods of conducting the water upon the land. The main canals follow contour lines that enable them to readily cover their territory, and the distributary system flows serenely over a country that presents no difficulties not to be overcome by occasional drops. The whole vast irrigation system, consisting of 300 miles of main canals and 1,100 miles of large laterals, is simplicity itself from diversion weir to outlet.

TWENTY-SEVEN CANALS.

The irrigation system consists of twenty-seven separate canals, fourteen of which are taken from the north side of the Kern River and thirteen from the south side. The largest of these canals is the Calloway, which is one of the famous canals of the West. The diversion weir is 400 feet long, constructed entirely of wood upon a foundation of anchor piles, driven deep into the sand; sheet pilings of two-inch plank are placed on the upper end and lower sides of the structure, and this weir has stood all the high floods of the past fifteen years without damage. The diversion weirs of all the other canals are constructed on this simple plan. The Calloway is eighty feet on the bottom, one hundred and twenty feet on the top, has banks seven feet high, and usually flows six feet of water over a grade of eight-tenths of a foot to the mile. This canal alone waters 200,000 acres, and sixty-five large distributaries are taken from it.

The most important canal on the south side is the Kern Island, which is

forty-eight and a half feet wide. This flows through the city of Bakersfield, where it has a drop of twenty feet, which serves as water power for at least one industry.

ARTESIAN WELLS.

In taking account of the water resources back of this enterprise, the large and numerous artesian wells that are found in many parts of the valley should not be overlooked. The supply from the river is so ample for present needs that these wells do not play an important part in the irrigation of the Kern Delta; otherwise we should hear much more than we now do of the wonderful artesian wells of the locality. The wells are very numerous, and flow a large volume in nearly every instance.

III.—Its Experimental Farms a School of Irrigation.

There was an experimental farm in Kern County a good many years ago and the present great development owes its origin to the results of it. That original experiment demonstrated the wonderful fertility of the soil and its adaptability for the production of everything that will grow in the semi-tropical zone.

It was not until recently, however, that the management of the company determined upon a plan which eclipses all other experimental farms ever undertaken by private individuals, and proposes to outrival the best that has been done by public institutions. This is a matter of much more than local interest. The people of the whole Pacific Coast will have the benefit of the expenditures of money and employment of skill which it involves.

The company is about establishing four experimental farms, located in different parts of Kern County. It has selected for the head of this work Mr. R. D. Cruickshank, who has for four years been at the head of the largest and most successful experimental farms on the Coast. With

every possible facility for the work he will scientifically determine the chemical qualities of the various soils of the valley, work out ideal methods of irrigation and cultivation, and demonstrate the utmost possibilities of profit on the various crops that are now being planted by settlers.

The primary object of this extensive undertaking is to assist in the development of the property of the Kern County Land Company, by showing settlers how they can make the best possible use of their land. The ultimate

prosperity enough for the country and the people who till the soil under such conditions as these, and get the results from their work which they have a right to expect from such ideal conditions. But the difficulty has been a lack of leadership. There have been those who have seen the opportunity to reduce fruit-growing and farming under irrigation to a scientific basis, but these men have generally lacked the means. At last here is a company that itself has the largest interest in solving these problems, and yet is



A HOME IN ROSEDALE COLONY.

results will be much more far-reaching. I believe it will be the beginning of that era of scientific farming and fruit-growing which we want to see dawn upon Arid America. It is the supreme advantage of irrigation that it offers a premium upon brains in agriculture. Where the "rainfall" can be adjusted to a nicety, assuming that the soil is good and the climate favorable, there ought to grow up the most scientific forms of agriculture the world has ever seen. "There is plenty of room at the top," and there will always be

willing to use its money and land and water for the benefit of the public at large.

The Age will take pleasure in keeping its readers constantly informed of the progress of these experimental farms, and it predicts that they will become the best educators in the country. They will turn out a class of expert irrigators, farmers and orchardists such as the agricultural colleges never dreamed of, because they will be dealing with practical problems rather than theories, and they will be

operating in the midst of the greatest irrigated farm in the world.

It is impossible to estimate the practical value of a series of comprehensive experiments like this, carried on through a period of several years, superintended by expert ability and enriched by every facility that money and enthusiasm can provide. The enlightened ideas which guide the management of this large company can teach a good many lessons to those who are conducting similar enterprises elsewhere, but none is more valuable than the lesson of these experimental farms.

IV.—The Making of Model Colonies.

Colonization is a branch of our modern irrigation development that constitutes an independent problem. It is a problem as important as it is fascinating. We may appropriate the streams, build ditches and evolve ideal methods of irrigation, but something is still lacking to enable us to realize the possibilities of the soil. This is the labor of the colonist, and nothing that is now going on in Western America is more interesting than the effort to rapidly people our reclaimed deserts with a thrifty and productive population.

The Kern County Land Company approaches this problem with the same comprehensive grasp and liberal spirit which it applies to all other departments of its work. It has 400,000 acres of fertile land, capable of producing a wide variety of crops, which in the end must be settled in small tracts, covered with homes and brought to a high state of cultivation. It does not expect to perform this task in a day or a year. It will be the work of generations, but it has made a splendid beginning. And the plans it is putting into operation are a legitimate matter of interest to the public.

THE PIONEER COLONIES.

The Kern River divides the company's property into two parts. The

Calloway Canal and its network of distributaries water the north side and the Kern Island the south side. As the nucleus of the settlement of its property it has laid out four pioneer colonies. The Rosedale Colony, consisting of 12,000 acres, the Lerdo Colony, consisting of 11,000 acres, are on the north side of the Kern River; the Union Avenue Colony, consisting of 13,000 acres, and the Mountain View Colony, consisting of 9,000 acres, are on the south side. It is to the settlement of these four tracts that effort is mainly directed at this time.

THE ROSEDALE COLONY.

The Rosedale Colony is just now attracting more attention than any other effort of the kind on the Pacific Coast. This is due in part to the model plans on which it is being worked out, and in part to the fact that it is drawing its settlers largely from a good class of Englishmen. No one can ride through this beautiful tract of country without making an involuntary mental comparison between the first English colonists who came to America and these latest recruits from the mother country. If the Pilgrim Fathers landed on inhospitable shores and faced untold hardships and dangers, the most ample amends are being made to these latest English colonists who have come to make a new home in a new world. So far as it is possible for money and effort to do it, difficulties have been smoothed away before them and the land made ready for their coming. The conditions of progress which they find in the sunny valley of the San Joaquin are widely different from those which met the gaze of the pioneer English settlers in America 271 years ago. In this case the land has been conquered and remains only to be made fruitful by the labor of the settler. There is ample evidence upon every side that their industry will find swift and generous reward.

The Rosedale Colony was planted in 1890. It was then merely a body of

level and fertile land, useful for the production of sagebrush, and populous only with coyotes and jack-rabbits. Its projectors had in their minds, however, a thickly settled community of orchards and vineyards, of homes nestling among trees, shrubbery and flowers, of schools, churches and all the social institutions of an advanced civilization. This was the picture they saw in their minds, and they proceeded to realize it as rapidly as possible. With ample means and favoring conditions of climate and soil they have worked wonders in the past three years.

Twelve thousand acres were laid out into twenty-acre lots after having

country will have arrived and begun the building of their homes in the neighborhood of their old English neighbors.

It is an inspiring thing to stand in the center of the Rosedale Colony and observe the marks of progress in a place where three years ago there was neither a house, a tree nor a vine. The main street of the settlement now has several good stores, and others are in course of erection. It has already those two old symbols of English civilization, the church and the school-house. A second church is in course of erection. As for the school-house, it is a building sufficiently large and handsome to reflect credit upon a com-



Pioneer Home in U. A. Colony

A UNION AVENUE COLONIST'S HOME.

been surveyed with a view to the convenient irrigation of these divisions. Space was reserved for streets sixty feet wide through and around every section. The hotel is everywhere the emblem of hospitality, and the first building erected by the company was therefore a hotel of generous dimensions, with large stables near at hand. The preliminary work of laying out streets and ditches was scarcely well begun before settlers began to come in and take up the lots nearest the town. The work of colonization has gone steadily forward from that time to this, and it is likely that before these words are printed another large party of home-seekers from the mother

community fifty years old, from which we may infer that this soil is destined to be fruitful in something beside the products of the earth. It already has a promising crop of young men and women firmly rooted, and, I judge, in a high state of cultivation. The company did not build the stores, churches and school-houses, nor seek to anticipate the needs of the community in this respect. When these things were demanded by the growing population the company contributed liberally, but it preferred to encourage the people rather than to direct them, in order that the community might work out its own institutions in its own way. Every settler knows that the liberal

managers of the great enterprise stand ready to lend moral and financial support to the aspirations of the community in which they naturally feel great pride, but the atmosphere of paternalism is absent, and the colony is solving its own problems in the good old-fashioned American way.

The way in which the newcomers proceed to develop their homes and its surroundings is an interesting study.



LATERAL CANAL AND DROP.

As has been said a majority of the settlers of Rosedale come directly from England with the purpose of making a home and a competence in a new world. They bring sufficient money to make one-quarter payment on their land, build a modest house, plant their twenty or forty acres to trees and vines, and sustain themselves during the period in which the orchards and vineyards are getting into bearing.

Stating the case in this way, it might seem that a very large sum of money was required to enable a family to lay the foundation of a home in Kern Delta. The company has worked out elaborate statements showing every item of expense involved from the time the land is purchased to the expiration of the three or four years required to bring the property to a productive stage. I do not care to quote these figures. I have no doubt they were compiled in good faith, but it is better to deal with experience

rather than prophecy when one is trying to get at the bottom of things.

I interviewed several of the colonists, and a composite photograph of their opinions gives this result: For the development of the twenty-acre farm a new settler with a family needs \$2,000, and \$3,500 will see him through with a forty-acre tract. Of course this implies careful management. A man might easily spend \$3,500 for his house alone. Some of the settlers have built fine houses, but in stating the amount of money actually required to enable a family to settle and prosper in this locality we are taking only the necessities of life into account.

The first house of the average settler costs from \$250 to \$400, and is comfortable and homelike, though not luxurious. The other requirements are a small stable, a pair of horses and a wagon, a cow, poultry and implements. This, with the land, constitutes the plant with which the settler starts, and the figures

I have named, based on conversations with several very intelligent settlers, are probably perfectly reliable.

The average colonist plants a variety of trees and vines. They all believe in the adage, "Don't put all your eggs in one basket." Thus one man plants ten acres in vines, six in trees and three in alfalfa, and adding another twenty acres to his original purchase the next year he puts another ten acres in vines and ten more in trees. Many of them plant a portion of their farms in annual crops for the first year or two, and thus get an immediate income and give the land a splendid preparation for the fruit culture that is to come later.

The aim of the company and colonists alike is to develop the ideal twenty-acre fruit farm capable of supporting a family in luxury. This is no castle in Spain. Such homes exist in many parts of California today, and it has been demonstrated

thousands of times that the ideal can be realized. Rosedale is not yet old enough to show results of this kind, but the wonderful fertility of the soil is demonstrated by the growth of trees and vines, and the profit of good horticulture is proven by results of the older places in the neighborhood.

It is always interesting to talk with people in a new country like this, and find out how they are satisfied with the results of their experiments. I never yet have seen a locality where everybody was satisfied. I have heard the legend of a chronic kicker who went to heaven and complained that walking on the golden streets made his feet sore, and, further, that his halo didn't fit him. I have met some people located on the property of the Kern County Land Company who make similar complaint with about the same show of reason, apparently. As a whole the people who have come here from other States or countries to make their homes look forward with confidence to final results. The soil and the climate are not debatable. Everybody knows the fertility of the one and the genial qualities of the other. As to the profits which await the successful fruit-grower, the State of California is full of examples. I have looked into the matter carefully, and am ready to tell the readers of *The Age* that one of the lessons which is being taught by this greatest of irrigated farms is that a thrifty family, with moderate capital, can make a prosperous and beautiful home in this valley on twenty acres of land if they will go into partnership with industry and intelligence. This is the testimony of most of the people who have settled here in the new colonies, and it is the unanimous prediction of those who have lived long in the country.

UNION AVENUE COLONY.

The colony on the south side of the river Kern is newer than Rosedale,

but not less promising. It takes its name from the magnificent thoroughfare which connects it with Bakersfield. Union Avenue is 115 feet wide and as level as a floor. It is destined to become one of the famous boulevards of California, as it is being rapidly beautified and improved. The new colony is growing up on the old Greenfields Ranch, the buildings and grounds of which are exceedingly attractive. The intending settler has only to look at the grounds, the garden and the orchard surrounding the low and commodious buildings of the ranch to instantly comprehend the possibilities of Union Avenue Colony. The plans which the company has for the colonization and development of this tract are similar to those which have been described in connection with Rosedale.

The soil here is a dark and rich alluvium, particularly adapted to the growth of prunes and other crops



DIVERTING WIER, KERN ISLAND CANAL.

requiring a heavier soil than that of Rosedale. Settlers are just beginning to build their homes in the Union Avenue neighborhood, and it is likely that the present year will see a wonderful growth there.

In the neighborhood of Greenfields the Mountain View Colony is another beautiful tract that is beginning to be rapidly settled. In some respects this is the most attractive of the colonies.

The homes of the settlers are near together, their farms closely planted, their orchards well kept. Mountain View presents a scene of energetic thrift and promise which it is quite inspiring to look upon.

The Lerdo Colony and Experimental Station are now undergoing development. Two hundred acres have been planted in vines, seventy acres in almonds, twenty acres in peaches, and forty acres in a great variety of fruits and cereals. It is expected that this locality will be suited to citrus fruits, but it is not at present recommended for this purpose. Located immediately north of Rosedale Colony, and having good drainage and railroad facilities, a great future is expected. For the present the company prefers perfecting its experiments in this locality before giving it unqualified indorsement.

V.—Horticulture in the Kern Delta.

One of the greatest charms of our irrigation empire lies in the ideal social conditions it is developing. Farm life is being revolutionized. The big farm is passing away before the dawning era of the small farm. Shiftless and promiscuous methods in agriculture are giving way to intensive cultivation.

The Age has long been the prophet and champion of these new conditions. It has always believed that with the coming of the small farm the old prejudice existing against rural life would pass away, and that it would again become popular to live in the country and to raise one's children in the sunlight. Small farms mean near neighbors, religious, social and educational institutions. They enable people to combine all the advantages of country life with most of the advantages of town life.

Nothing more dreary and uninviting can be imagined than the lonesome life of the great farms of the Mississippi Valley. On the other hand, nothing more attractive can be thought

of than life on the small farms of California. The two cases represent the extremes in the conditions of agricultural life in the West, for there are not many places in the United States where the charms of the small farm can be worked out so fully as in California, and, to be entirely just, there are not many places where so many elements combine to make life wretched as on the big farms of the Middle West, where nothing grows so surely as the mortgage.

This fruitful valley of the River Kern, with its expanding colonies and rapidly advancing horticulture, is destined in time to give us the best fruits of the philosophy of the small farm. With the aid of its experimental stations and the generous backing of capital it will show us the very utmost that can be accomplished on small areas. The soil and climate are suited to diversified production, and the class of settlers who are coming in is such as to promise the best of results of the experiment.

GENERAL CONDITIONS.

It must be understood that the settlers who have been attracted here by the operations of the Kern County Land Company have not yet had time to bring their orchards into bearing. They have planted extensively and variously. Their trees show a remarkable growth in every instance. Our dependence for facts about the horticultural products of the valley must, therefore, be upon older settlers whose orchards were planted from five to ten years ago. One need not go farther, of course, than the office of the company to see fine samples of fruit and obtain statistics of prices and product per acre. I preferred to look elsewhere for facts, because with me the greatest of irrigated farms is a fascinating study, as I know it must be to the readers of *The Age*. So I employed considerable time in conversing with the older fruit-growers who have nothing to do with the company, and are therefore in position to

speak without bias. Some of them are gentlemen orchardists who began to grow fruit as a pastime and recreation. These men run banks, lumber yards and other important enterprises. It is easy to see, however, that the pastime has become a business, and a business that returns gratifying profit; for these men know just what returns their orchards earn, and are planting out more trees with genuine enthusiasm. I relied upon them confidently in seeking results, and think their figures perfectly trustworthy.

The general conditions for horticulture in the valley are well-nigh perfect. The soil and climate are such as to give the trees remarkable vitality, and the fruit great size and good flavor. Almost as important as soil and

which lie at the basis of the growing prosperity of Kern Valley horticulture and give the certain promise of rapid and steady development.

DECIDUOUS FRUITS.

Horticulture in the Kern Valley for commercial purposes is limited to the deciduous fruits. This reminds me of another unique thing about this great enterprise; that is, that the agent and manager of the company says plainly in all his circulars and advertisements, "Citrus fruits will grow here but are not recommended to planters." That is literally true. Oranges, lemons and limes not only will but do grow, but the frost comes just often enough to interfere with their profitable culture for purposes of



A YOUNG PEACH ORCHARD.

climate are markets and transportation. The Mississippi Valley and the North Atlantic States are California's market. It is a market which never yet has had enough of really first-class fruit, and which yearly absorbs more and more of the wonderful products grown in our semi-tropics under irrigation.

Kern Valley is most fortunate in its transportation facilities. The Southern Pacific Railroad passes directly through it, and the Santa Fé system terminates within ninety miles of Bakersfield, the Kern County capital. The business of picking, packing and shipping fruit has now been reduced to so fine a point that only six days are consumed between the Kern Valley orchard and the Boston breakfast table. These are general conditions

commerce. Nevertheless, it is a singular instance of aggressive honesty for the manager to make this statement plainly instead of trying to sell his land at orange prices when a few creditable orange groves can be seen here. Most people who have traveled through the southern portion of the arid region have made the acquaintance of some men and companies who could learn a valuable lesson on this point from the agent of the Kern County Land Company.

There are no limitations, however, to be placed upon the range of deciduous fruits that can be grown successfully.

PEACHES.

If Kern County had nothing to show for itself except the peaches which millions of people will inspect at the

World's Fair, it would be a notable locality. Such peaches may grow elsewhere occasionally, but it is not to be believed that there is any other locality where so large an area in a single body is capable of producing them.

Some of these peaches weigh twenty-three ounces, and are pretty nearly as big as a man's two fists. They are as remarkable in color and flavor as in size. It goes without saying that men who raise such peaches as these have been making more money per acre each year than anybody would think of asking as the original price of the land.

It is a difficult matter to arrive at an absolutely fair statement of the profit realized per acre on peaches and other fruits. I made a painstaking effort to do so. The best orchards are not more than five or six years old, and the larger portion of those are of more recent planting. In such orchards the product of the three-year-old tree is not kept separate from that of the maturer trees, and so it is practically impossible to determine exactly what a first-class peach orchard in a state of maturity will earn. I have heard of no instance where an orchard earned less than \$240 per acre, and that is in the case of trees planted in 1885 and has reference to the crop of 1887. The highest figures given me nearly double this.

After a careful investigation of the subject with the best and most trustworthy orchardists in the county, I should say that a reasonable and reliable estimate would be \$200 to \$300 per acre net profit on peaches, taking one year with another.

APPLES AND PEARS.

All varieties of apples grow well, and certain kinds are profitable. The same is true of pears. The Bartlett pear of the Kern Valley must be seen to be appreciated. It would cost a man his reputation for veracity to attempt to describe it. They grow to enormous size, and are very profitable.

PRUNE, THE COMING FRUIT.

The most remarkable development in Kern County horticulture in the near future will be in prune-growing. Dozens of orchards are already planted. The soil in a part of the valley seems to have been made to order for the prune, and the growth of the young trees is astounding. Prunes can be marketed either fresh or dried, so that the producer has two chances to make money out of his crop. If the demand for fresh prunes is light or prices low he can dry them and wait for a better market. The prune has been constantly growing in favor, and seems certain to become the food of the people beyond other fruits. It is both palatable and nutritious, and ought to come into much more general use with increased production. Up to this time prunes have paid rather better than peaches. Orchardists, with whom I have talked, however, say their profits can be divided by four and still leave a very satisfactory result. It is difficult to see how the profit on prunes can ever fall below fifty dollars per acre under any circumstances, and there is plenty of money in them at that figure.

OTHER FRUITS.

All the other fruits of the temperate and the semi-tropic zones, except citrus fruits, are produced successfully and profitably. The small fruits also thrive, and strawberries, blackberries and raspberries are very profitable when cultivated for the market.

Fruits and gardens are irrigated here entirely by the furrow system.

VI.—The Raisin Industry by Irrigation.

The development of raisin vineyards in San Joaquin Valley during the past ten years has been one of the marvels of the modern irrigation era. The raisin grape is brought into bearing quickly, and its profit per acre has been very large. The growth of competition, and unscrupulous methods

pursued in some localities, have affected prices unfavorably in the past year or two, but there is every reason to believe that good raisins will always command good prices.

The most striking development in the Rosedale Colony up to this time is that achieved by the Rosedale Raisin Vineyard Company. The vineyard was planted in January, 1890. It marketed a crop of thirty-three tons eighteen months later, and a crop of 185 tons the following year. At eighteen months old the vines earned a gross income of \$12 to \$18 per acre.

the raisin industry by irrigation. Colony after colony has settled in its tributary territory, and the settlers have been almost uniformly prosperous. It is not likely that the raisin industry will become as extensive in Kern County, but it is certain that the raisin output here will be large and the quality of the best.

VII.—A Glance at the Big Farms.

The Kern County Land Company is the best instance that can be cited of the revolution that is going on in



PEACHES AND VINES AT EIGHTEEN MONTHS FROM PLANTING.

There can be no doubt that that vineyard will regularly net \$100 per acre to its owners at five years old. The grapes are irrigated through furrows three times a year, though they do well in some seasons with one irrigation.

The raisin industry will be a large one in Kern County, especially in the Rosedale Colony, where the soil is particularly adapted to it.

Everybody is familiar with the wonderful history of Fresno. In a few years it has grown into a large city, and its wealth has come entirely from

California. The great estates are being divided, and the cattle ranches are giving place to the colonies. It is an interesting movement, and one that promises a wonderful growth in wealth and population for California. This princely domain of 400,000 acres was for years held as a private estate, and used for stock-raising and general farming on a gigantic scale. Although much of the property has been sold and settled and is now in process of rapid transformation into garden, vineyard and orchard, some of the great farms still remain. I had an

opportunity to enjoy the hospitality of several, and have passed a few memorable days in visiting them.

Fourteen ranches of the first-class are still maintained on the property. Of these the most interesting is Bellevue, which rounds out the idea of a luxurious country seat in California, although it is a purely business headquarters. It is the head of the cattle department, and the residence of the superintendent of that department. The picturesque and commodious dwelling-house was surrounded by velvety lawns, and beautiful with vines and shrubbery, in January. There is a very creditable orange grove on this place, which offers a strong temptation for the assertion that oranges can be raised here successfully for commercial purposes. It is not likely, however, that the average orange-grower would find it profitable to surround his grove with so much protection as they receive from the thick growth of trees and shrubbery here.

The garden at Bellevue is another demonstration of the productive capacity of the soil. Vegetables of all kinds grow there in a high state of cultivation throughout the year, and even the tender strawberry leaves did not show much discouragement from the frost.

The ranch at Greenfields, which has already been mentioned as the central point in the Union Avenue Colony, is another beautiful place which holds inspiration for the heart of the settler. Stockdale is the headquarters of the horse-raising department of the property. Like Bellevue, it is a beautiful country seat. Its stables and pastures contain a large amount of the finest horseflesh, including many animals well known in the equine world.

The Poso Ranch lies at another extremity of the property, on the north side of Kern River. This is the largest and in some respects the most interesting of them all. Superintendent Moncure, to whose hospitality I am indebted, has 24,000 head of cattle

under his charge at this point. Beside this, he farms on an imperial scale.

ALFALFA ON A BIG SCALE.

The Kern County Land Company has in cultivation to-day 60,000 acres of alfalfa. Don't get excited! They used to have 125,000 acres of alfalfa, but the area is gradually lessening as land is sold and put to other uses.

The best system for the irrigation of alfalfa on a large scale that I have ever seen in operation is that followed at the Poso Ranch. The ranch lies under the main line of the big Callo-way Canal, from which sixteen-foot laterals are taken out at intervals of a quarter of a mile. The land is laid out into checks, the low embankments of which are made on contour lines. The three or four checks lying nearest to the big canal are watered directly from that source by means of a side gate. While this operation is going on the lower checks are being filled from the laterals, and the water passes from check to check until the whole field lying between the two laterals is irrigated. By this system 1,000 acres per day can be irrigated by the use of eight ditches and eight men. The expense is only five cents per acre, or fifteen cents for the three irrigations necessary during the season. The hay is cut and put into stacks by contract for \$1.50 per ton. When it is stated that the hay is worth \$5.00 per ton in the stacks, and that the five or six crops that can be cut in the course of a year yield from eight to twelve tons per acre, it is plain that there is money in alfalfa.

As a matter of fact alfalfa pays a net profit of \$25.00 per acre when cultivated in this way. As the company is feeding about 60,000 cattle and thousands of sheep and horses, it has no hay to sell, but it probably nets fully \$25.00 per acre as a result of feeding to stock.

The problem of raising the largest number of stock of any kind upon the smallest area of land is successfully solved by the cultivation of alfalfa.

VIII.—The Golden Rule Applied to Settlers.

It is interesting to study the attitude of a great company like this toward settlers. It would seem that an enterprise with a property so large that its entire sale and development must cover a long period of years would necessarily adopt the golden rule as the basis of its policy in dealing with those who colonize its lands.

It is not seeking to dispose of its property to a single man or company, but to thousands of individuals. It expects to be here selling land next

have located him on a twenty-acre tract. We are not through with him when we have made a sale. We take a broader view and consider that his interests and ours are mutual. His blunders may cost us thousands by depreciating the value of our property and discouraging further investment. His successes, on the other hand, enhance the value of our property and furnish the best argument to induce other settlers to come. We make no claim of philanthropy in this matter. We merely think it is business on our part to sell a man good land instead of poor, to advise him what he can



HOW ALFALFA HAY IS MADE.

year and ten years and twenty-five years hence. I could not understand how anything but absolute good faith, downright truth-telling, and a disposition to render all reasonable assistance in solving the question of prosperity for individuals, could be consistent with such an undertaking. And so I have found it.

In every way possible care has been taken to show the settlers how to take the steps necessary to success.

Mr. S. W. Fergusson, the agent of the property, said to me: "We do not consider that we have no further interest in a man and his family when we

plant to the best advantage, to show him how best to irrigate and cultivate his trees and vines. The man who knows least about land and fruit-growing has perhaps the best chance of success, because he will draw freely on our experience and knowledge, and we will freely give him the best we have."

Mr. Fergusson puts this policy of his on purely business grounds. Undoubtedly it is shrewd from that standpoint, but I think it can be credited to a higher motive.

The best fruit of this policy up to this time is found in the establishment

of the experimental farms, which have already been described. But there are other things to come, and I believe that to an ideal climate, an ideal soil and an ideal irrigation system the settlers of the Kern Delta will soon add an ideal social condition, worked out for their benefit. At any rate, there is another lesson here that the friends of irrigation can study to advantage.

IX.—Bakersfield, the Seat of Operations.

Bakersfield is the seat of the large operations which have been described. This interesting city is within easy reach of both San Francisco and Los Angeles. Leaving the former at five in the evening, or the latter a little before midnight, the traveler finds himself at Bakersfield for an early morning breakfast. His first impression is pleasing. He finds a well-built and well-furnished hostelry awaiting to make him comfortable. He sees all about him attractive and substantial business blocks with large and modern stores. Leaving the business streets, he instantly observes that the character of the homes and their surroundings is pleasing. These first aspects impress the newcomer with the notion that Bakersfield is a thriving and prosperous city, and that its 4,000 population is pushing forward with a high sense of local pride.

A CITY WITH A FUTURE.

A most casual examination of surrounding conditions convinces one that Bakersfield is a city with a future. First of all, it is the center of a large district which is being rapidly peopled with a productive class of settlers. It is surrounded by more than half a million acres of very fertile land that is being brought into orchard and vineyard. Every new settler is worth something to the town that is the seat of his supplies. A part of the wealth that will be taken from the soil is sure to be left in the city, in one

form or another. When we consider that this half million acres is already under irrigation, and that the tide of settlement is flowing steadily into the country, it is perfectly certain that Bakersfield must constantly grow. It is not at all surprising that it is difficult to find a vacant house, and that carpenters and masons are busy throughout the year. I should say that if there was nothing back of the town except its little empire of irrigated land Bakersfield must soon become as large as its neighbor, Fresno, which has 12,000 people. Fresno was made by the same forces that are back of Bakersfield, and certainly those forces were no better directed than they are in this instance. It is a great point in the future of Bakersfield that the surrounding development is going forward under the leadership of a single directing mind, and that that mind is in the habit of taking broad views of things.

RAILROADS.

Bakersfield is on the main line of the Southern Pacific Railroad. The official figures show that sixteen hundred carloads of freight were shipped away last year, including 666 of cattle, 441 of sheep, 100 of potatoes, 109 of peaches and other fruits, and 31 of asphaltum. The imports amounted to 1,400 cars of merchandise, of which 445 were loaded with lumber. The freight traffic has increased rapidly each year, and will rise to enormous proportions as the land now planted to trees and vines comes into bearing.

The Santa Fé Railroad is now ninety miles south of Bakersfield, but has surveyed a line into the town, and seems certain to build before long. This step would be so manifestly a wise one from a railroad standpoint that it cannot be long delayed. During the past year the Southern Pacific has built a branch line fifty miles toward the west to develop the asphaltum and oil belt. This is a new and important tributary to Bakersfield. When the Southern Pacific made Bakersfield

the point where the San Joaquin Division ends, and the Mojave Division begins, it gave substantial evidence of its opinion of the future importance of the place as a railroad point.

OTHER RESOURCES.

Bakersfield has a variety of resources in its surroundings. The horticultural and agricultural wealth will doubtless always be the matter of the most importance, but lumber, asphaltum, gold and other raw materials will swell its business and increase its importance as a traffic point. With the development of these varied resources its population and wealth must go on

system guarantees is more certain than the community that is built up by a prosperous, productive population. Without irrigation Bakersfield would be the center of cowboys and herders. With irrigation it is rapidly becoming a place of attractive social conditions and thrifty mercantile institutions. When you have made the small farm sure the beautiful, well-built and well-kept town follows as a logical consequence.

The Kern County Land Company is in the midst of the interesting process of making a rich country. Bakersfield must always be the heart of that country. The resident and the



ONE OF BAKERSFIELD'S BUSINESS STREETS.

growing. Cattle, sheep, horses and hogs are very largely owned in Kern County, and are sources of considerable annual profit. A city with a surrounding country where so many important interests unite in its support certainly may figure on future growth with a fair degree of certainty.

ITS RELATION TO IRRIGATION.

But it is as a product of irrigation that Bakersfield interested me and that its future appeals to my imagination. Nothing that the canal brings into being is more satisfactory than these lovely towns of California. Nothing that the existence of a great canal

visitor will always start from this attractive city and ride over broad, shaded avenues out among the orchards, fields and vineyards of the settlers. Town and country must prosper together, and one will always reflect the glory of the other.

X. — The Future of a Great Enterprise.

What will be the future of this imperial enterprise? It is difficult to conceive of it as it will appear in its ultimate development. Its final possibilities outrun the imagination. Its model methods of colonization are at

present applied to about 50,000 acres of the 400,000 owned by the company and covered by its canals. When these are completely settled the company will have barely crossed the threshold of its work. It will indeed have results to show and its methods established, and yet its policy must always be progressive, and colonies yet to be begun will have advantages as far superior to those enjoyed by the present settlements as theirs are superior to what the settler meets in most other localities.

One who rides over the property comes back with a large but vague conception of what this little empire will look like when it is thoroughly settled and developed. But it is idle to look so far. It may take one or two centuries for that point to be reached. What will be accomplished in the next ten years? That is enough to contemplate now. I believe the next decade will see a degree of progress beyond anything that a similar period has seen, even in magnificent California. I have a lucid reason for this faith. It is that this broad valley, unlike other localities that have been thickly settled, is going forward under one directing and controlling head. The smallest detail of the present improvements is a part of the symmetrical whole that is to be. Everybody who has seen anything of town building or colonization on a large scale knows the importance of this factor. Another reason: unlimited capital stands behind these operations. Whatever it is best to do can be done, and will be. There will be no distressing halts. The march will be ever onward.

The next ten years will doubtless see thousands of acres settled and brought into bearing trees and vines. It will see the newness rubbed off of the colonies, and outward aspects take on the beauty that comes with age.

As the small farms become prosperous the little homes will vie with each other in comfort and luxury. The new streets that now run through virgin soil will be lined with graceful

trees. Even at that date the wealth annually produced from these acres will be enormous, and it will be turned back to enrich the community that produced it. Ten years will do wonders for the Kern Delta.

As for what the country will be when it is finally settled and cultivated, it would be idle to attempt to speak. That must wait until another Bellamy writes another "Looking Backward."

ASPHALTUM AND MALTHA.

ONE of the most wonderful and curious sources of wealth of Kern County is found in the asphalt deposits, which, judging from the surface indications, are practically inexhaustible.

They lie along the base of the Coast Range forty-five miles west of Bakersfield, commencing at a point about six miles from the Santa Enigdio Ranch, and extending thence along an anticlinal to the northwest for a distance of thirty-five miles. This anticlinal or break has the appearance of having been opened at some time by the effects of an earthquake, so regular is the line of the break, and from various points flows the heavy maltha or liquid asphalt, soon to be changed by the sun's heat into solids of different degrees of purity.

Wells have been drilled in this body, and deposits of maltha and a high grade of lubricating oil have been struck.

To form an idea of how extensive some of these overflows are with their accumulation of years, the visitor may see a cliff forty feet high and about 200 yards wide that appears to be a solid mass, with here and there the semi-liquid asphalt is coming up in springs and spreading another layer over the surface.

These deposits belong to the Standard Asphalt Company, a company comprising some of the most enterprising individuals in Bakersfield, whose

efforts induced the Southern Pacific Railroad to construct a road to the deposits, a distance of nearly fifty miles. The company is under the management of Messrs. H. A. Blodget, Sol Jewett and Louis Blankenhorn. Captain H. Hutton, formerly a well-known business man of Los Angeles, has charge of the mines and refinery. The product is shipped to the Eastern States for paving purposes, and is far superior to the Trinidad asphalt brought from the West Indies. It is expected that not less than 10,000 tons (1,000 carloads), will be shipped next year to various points East from these deposits. The capacity of the

element of chance is removed from agricultural pursuits, and the farmer who irrigates can plow, plant and cultivate in the serene and absolute assurance that he will in due time reap an abundant harvest. For him drought has no fears.

All farming operations in Kern County, as in various other portions of California, are conducted with the aid of irrigation. To supply the water needed, the Kern River, which is a never-failing stream, with its source among the eternal snows and glaciers of the lofty Sierra, is tapped by a large number of canals of varying size, having an aggregate length of



CORN RAISED BY IRRIGATION.

refinery is now some twenty tons of refined asphalt a day, which will be steadily increased to meet the extraordinary demand.

In the vicinity of the asphalt deposits are beds of sulphur of large extent, which have been prospected to some degree and found to be of great size and practically inexhaustible.

ADVANTAGES OF IRRIGATION.

EASTERN farmers know little about irrigation, except from hearsay. There is no space to go into details here, but it will suffice to say that by irrigation every possible

over three hundred miles, and with some twelve hundred miles of laterals, by which the water is conducted wherever wanted.

The labor of irrigation is very small indeed by the side of the benefits conferred, while the cost, which does not exceed \$1.50 an acre annually, is so small when compared with the assurance given of a large crop, which could not by any possibility be raised without water, that it cuts no figure with the beneficiary.

The custom is to include a water right in the purchase price of lands sold, the only additional charge being a small annual payment for mainte-

nance and interest on the immense capital invested in the canals.

In many portions of California land-owners readily pay from \$75 to \$150 an acre, and even more, for the right to use water on land which has already cost them fully as much more. In Kern County, however, land and water right together are sold for from \$60 to \$100 an acre, while the annual charge is far less than the average elsewhere.

The possession of a water right with land is equivalent to the ownership of an insurance policy guaranteeing a good crop, no matter what the weather may be. The farmer who is exposed to climatic idiosyncrasies can best appreciate the real value of such an unequalled boon as this.

That two crops may be raised on the same ground in a single year.

That vegetables grow the year round, and may be harvested every day.

That with the aid of water the grain crop is a certainty.

That general farming can be, and is, carried on here with a greater assurance of success than in any locality where irrigation is not practiced.

That the climate is healthy and attractive, and disagreeable disturbances of any kind are rare.

That Bakersfield is the largest place between Fresno and Los Angeles, a distance of almost 300 miles.

That it is the railroad center of the southern San Joaquin Valley.



A COLONIST COMMENCING WORK

SOME PERTINENT FACTS.

IT IS a fact—
That the Kern Delta has hundreds of thousands of acres of the most fertile land in the world.

That it has the largest system of irrigating canals in the country.

That it has the largest irrigated farm in the world.

That it has the largest alfalfa fields on the continent.

That its lands are cheaper than any other irrigated land in the State.

That the fruit-grower or small farmer has unsurpassed advantages.

That there are good railroad facilities, and that products may be shipped direct to all parts of the country.

That on these irrigated lands crop failures are practically unknown.

That it is the natural distributing point of an immense territory.

That it is progressing more rapidly than any other city in the San Joaquin Valley.

That it is destined to be the largest city between San Francisco and Los Angeles.

That it presents numerous opportunities for enterprise of various kinds.

That it has gas, electric lights and water works.

That it has a street-car line, and will soon have electric cars.

That it has the handsomest railroad station in the State.

That it has the best repair shops between Sacramento and Los Angeles.

That a quarter of a million dollars will be expended on improvements inside of six months.

Directors:

LLOYD TEVIS, President. IRWIN C. STUMP, Vice-President.

F. G. DRUM, Secretary.

J. B. HAGGIN, W. F. GOAD, WM. S. TEVIS, HENRY WADSWORTH.

Capital \$10,000,000.

Kern County Land Company,

(INCORPORATED.)

S. W. FERGUSSON, AGENT,

BAKERSFIELD, CALIFORNIA